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EDITORIAL NOTE.

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WAR AND THE SMALL RETAIL SHOP.

Owing to an unfortunate mistake, we omitted to publish with the Supplement to Vol. 4, No. 5, an acknowledgment to the National Institute of Economic and Social Research. We should like to make it clear that the research was carried out as part of a wider enquiry on which Mr. Madge has been engaged for the National Institute of Economic and Social Research. Mr. Madge wishes to acknowledge his indebtedness to the National Institute for permission to publish the results as a Supplement to the Bulletin of the Institute of Statistics.

THE EDITOR.

THE BUDGET

NO INFLATION ?

In the part of the Budget Speech dealing with the review of the developments in the last financial year, Sir Kingsley Wood stated rather confidently " that during the last year we have definitely held our own against the onset of inflation. The enemy is still at our gates. Our vigilance must not be relaxed for a moment, but we can at least claim that as yet he has not established a bridgehead against our financial defences." This statement seems to be a little too optimistic. The Chancellor of the Exchequer rightly pointed out that the prices of controlled goods, especially of those entering into the cost of living index, have been kept nearly stable since April of last year. There has, however, been a violent increase of prices in the uncontrolled sector both in food and in household goods. In these sectors a typical inflationary development has taken place.

However, price increases out of proportion with costs are not the only symptom of an inflationary situation. Another indication of divergency between demand and supply is the depletion of stocks. Now what is called home disinvestment amounted in 1941, according to the White Paper, to about £500 million, and its rate in the last quarter of 1941 was probably substantially higher. Depletion of private stocks is certainly an important item in home disinvestment. Sir Kingsley Wood said on the subject : " I can say with some confidence that there has been no dangerous inroad into private stocks, although the supply of non-essential goods no longer currently produced is naturally and properly gradually drying up." It is rather difficult to imagine that there are sufficient statistical sources to show that the " drying up " was chiefly in goods no longer currently produced, and indeed the White Paper[1] formulates this rather more cautiously, saying that depletion of stocks "mainly affected finished products and non-necessary materials." Now there are two aspects of this process. First, it indicates that there was a discrepancy between actual consumption and the supply of consumption goods as determined by imports, home production and the Government's policy of increasing or reducing their stocks, and as long as consumption is not diminished or supply, as ruled by the above three factors, is not increased, the reduction of private stocks will continue at the same rate. Secondly, the inroad into the stocks of "unessential" goods is by no means without danger. Among these "unessential" goods there are, for instance, household goods, the supply of which may be very important if the bombing of this country is renewed.

Sir Kingsley Wood stressed with satisfaction the rise in personal saving from 1940 to 1941. It should be noticed, however, that in this item there is a part which has not been saved voluntarily or as a result of orderly rationing, but was enforced by the difficulty of buying goods owing to shortages and queues, which are a symptom of *sui generis* inflation.

As one of the tools which greatly contributed to preventing inflation the Chancellor of the Exchequer mentioned rationing. That was undoubtedly so, but rationing was rather a windfall to the Treasury. We found no mention of its being planned in the Chancellor's speech last year. And indeed it was introduced last year rather under the pressure of events than as part of a comprehensive plan to prevent a divergency between demand and supply from arising. This time the position is different because Sir Kingsley Wood explicitly relies in his speech on an extension of rationing in the next year to fight the "enemy round the corner." Let us hope that the extension will be this time introduced *before* the urgent necessity arises.

DIRECT TAXATION.

Although direct taxation plays but a small part in the Budget proposals, the problems connected with it were prominent in the Budget speech. The spreading of income tax to wage earners in the Budget of last year is generally known to have created severe difficulties. As was anticipated in this BULLETIN[1] it tended to hinder the war effort by taxing overtime pay severely, and to a lesser degree, but still very strongly, the wages of married women. The other problem was the formidable difficulty encountered in the collection of income tax—which was originally designed for taxing the high and middle incomes—from wage earners. One of the problems involved was tackled radically by the Chancellor by increasing the allowance to married women in employment from £45 to £80. There was, however, no mention of the problem of overtime although, for instance, the representatives of the shipyard workers stressed a few months ago the urgency of the problem. A small improvement in the technique of the collection of the tax has been introduced, but it can hardly be considered as satisfactory. Whether it would not be better to increase the earned income allowance and exempt thereby a great part of the wage earners from income tax altogether is an open question. The essential accompaniment of such a step, which would increase purchasing power and so be a weakening factor in the fight against inflation, is the greatest possible extension of rationing.

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[1] Cmd. 6347, page 4.

Sir Kingsley Wood tried to show also that the taxation of the rich as a serious contribution to revenue is out of the question. "If we were," he said, "to take away every penny of income above £2,000 from those whose incomes at present exceed £2,000, the gain to the Exchequer and the decrease in current purchasing power would be about £30 million." However, an estimate published in this number of the BULLETIN[2] shows that the excess of net incomes of those who at present earn more than £1,100 after taxation is about £90 millions and therefore it remains an important source of revenue. It is quite true that this "taxing of the rich" cannot be expected to contribute much towards fighting inflation, because they will be able to maintain their consumption by dissaving or to cut such expenditure, for instance on rent, which does not help in reducing the danger of inflation. But if taxation is considered not only as a weapon to cut consumption but is also imposed to reduce the future Government debt, this source of revenue should not be neglected. Another source of revenue for this purpose may be an annual capital tax.

INDIRECT TAXATION.

The indirect taxation on which the current Budget relies may have two purposes: (1) to bring in more revenue and thus to reduce the future indebtedness of the Government, or (2) to curtail consumption and thus to prevent inflation. The first purpose is definitely the less important one, and might be best achieved by taxation of high incomes and/or an annual capital tax. Total consumption will probably be curtailed by indirect taxation, because it will be a serious new burden on low incomes and the people concerned will be compelled to cut the consumption either of the goods affected (tobacco, beer and entertainment) or, while maintaining their present consumption of these goods, to reduce their expenditure on other goods and services. It is, however, paradoxical to maintain that such type of curtailment of consumption is a fight against inflation. To fight inflation by increasing prices is indeed self-contradictory. True, there is a difference between the price rises caused by indirect taxation and by *laisser-faire* inflation, because the first is planned by the Government and thus affects only certain commodities. However, beer and tobacco are commodities of mass consumption quite comparable as necessities with certain types of food, and even in the luxury group which the new Budget proposals subject to double Purchase Tax are some which are commonly used by large masses of the population, as for instance cosmetics. One might argue, of course, that in the present emergency the use of cosmetics could be abolished altogether, but it is no proper solution of this problem to make them so expensive that they will be accessible only to the relatively well-to-do.

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[1] April 26, 1941.

[2] See p. 143.

The tax on entertainment suffers from the general disadvantages of indirect taxation and in addition it is likely to curtail consumption in a quite unhelpful way: the reduction in frequenting picture theatres does not release any raw material and hardly any labour for the war effort.

CONCLUSIONS

The danger of inflation in one form or another seems in the light of the above much graver than was depicted in the Budget speech; the more so that further cuts in supplies must now be expected. At the same time no satisfactory remedy against inflation is proposed. As pointed out above, indirect taxation does not in fact differ substantially from *laisser-faire* inflation in its incidence upon consumers.

It is significant that the best parts of the present Budget are the amendments to last year's and this year's Budget proposals: the increase in the allowance to married women in employment, the exemption of men in the Forces from tobacco tax, the exemption of utility clothing from purchase tax. This is not accidental. Neither direct nor indirect taxation are satisfactory weapons to cope with the problem of inflation, which consists in cutting consumption in an equitable way. This function may be performed only by a scheme of comprehensive rationing.

M. KALECKI.

CONSUMPTION AND RATIONING.

In the following article an attempt is made to estimate (1) the reduction in the volume of retail sales to civilian consumers during the past few years, and (2) the proportion of total expenditure which is now taken up by rationed goods.

(1) The estimates of civilian consumption are based on the monthly indices of retail sales provided by the Bank of England, corrected for changes in price as shown by the Ministry of Labour's Cost of Living Index. They have to be read, however, with a number of qualifications. The Retail Sales Index, in the first place, is not entirely reliable. Returns are made voluntarily, so that although the sample is large it is not random; and the number of returns varies from month to month, so that continuity is impaired. The small independent retailer, in particular, is not adequately represented, and since the movements of population resulting from evacuation have probably caused some trade to be transferred to these smaller shops, the index on this account may be too low. On the other hand, small shops have been closing down more rapidly

than larger ones, and the evidence of the Retail Trade Report suggests that the larger shops have also been better placed to obtain limited supplies. In addition, " the statistics tend to be too favourable as a measure of total trade where firms have ceased to make returns after suffering from enemy action." [1] Again, where firms operating a number of shops have concentrated their business in certain branches and closed others, an upward bias is introduced ; but where the records have been amalgamated the bias is in the opposite direction, since all the trade of the closed branches would not have been transferred to the branches which remain open. It is difficult to judge the net effect of these various influences ; but it seems more likely that the index will be too high than too low.

Secondly, the only retail prices which are available, namely those given in the Ministry of Labour's Cost of Living Index, do not correspond very closely with the items included in the Retail Sales Index. The index of total sales has been deflated by the cost of living index, excluding rent, fuel and light ; and those of food and clothing by the corresponding price indices. The Ministry of Labour's index, especially that of food, tends to understate the rise in prices so that our final index is also too high on this account ; some allowance for this is made below. The index of clothing prices, on the other hand, may be too high. Further errors are thus introduced when the index numbers of the value of sales are deflated by the respective price indices.

The resulting estimates of the volume of retail sales, shown in Table I, may nevertheless be used, in the absence of more exact data, to indicate the general trend of civilian consumption during the past few years. Quarterly and yearly averages are shown, taking the average volume of sales in 1938 as 100. The series have not been adjusted for seasonal variations, since the seasonal changes have been considerably modified during the war period and are not sufficiently regular to allow of elimination.[2] The "trend" figures can however be estimated by inspection.

TABLE I.
VOLUME OF CIVILIAN CONSUMPTION.
QUARTERLY INDICES (1938=100)

		(i)	(ii)	(iii)	(iv)	*Yearly Average.*
All Items	1939	95.1	107.9	100.0	102.9	101.5
	1940	86.6	91.7	85.0	90.3	88.4
	1941	77.1	81.7	74.2	82.1	78.8
Food	1939	100.4	109.4	103.3	100.0	103.3
	1940	91.3	95.7	88.1	88.5	90.9
	1941	87.8	88.3	84.7	91.6	88.1
Clothing	1939	83.4	113.2	97.3	103.9	99.4
	1940	72.6	83.3	78.3	84.6	79.7
	1941	54.8	67.0	49.6	55.0	56.6

The reduction in consumption has evidently been greatest in the case of clothing and least in the case of food ; the consumption of the latter increased sharply in the last quarter of 1941, reflecting the improvement in the supply situation. The average consumption of food in 1941 appears to have been about 12% less than in 1938. But the index of food prices does not indicate the full rise in price of all foods, since the foods which are not included in the Ministry of Labour's index have risen in price much more than those which are included. The Government's policy of subsidising the prices of essential foodstuffs seems to have been applied with particular consideration to foods included in the index. The data which have been supplied to us on grocery sales[1] show an average increase in price, for foods not included in the index, of about 60%. If we take this into account, using weights from the 1937—8 family budget enquiry, the index of food prices in 1941 is raised from 119½ to 126 and the index for all items from 131 to 134. The reduction in consumption between 1938 and 1941 would then be 16—17% for food and 23% for all items.

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[1] *Board of Trade Journal*, 6th December 1941, p. 351.

[2] Figures were given in an earlier article (BULLETIN, Vol. 3, No. 10) with the normal seasonal variation removed, but the result was to produce small seasonal variations in the opposite direction.

Allowing for seasonal variations, we can also estimate approximately the "trend" figures in December 1941. The reduction in consumption up to the end of 1941 then appears as 24% for all items, about 18% for food and over 50% for clothing. Taking the revised estimates for the index of retail prices, we obtain a fall of 23% in the consumption of food and of 26% in the consumption of all items (from 1938 to end of 1941).

Consumption per head, of course, has not fallen as much as this, since some 3½ to 4 million men have been withdrawn to the armed forces and receive food and clothing directly from the Government. We must allow, therefore, for a decline of about 8% in the civilian population[2]. The reduction in consumption per head, up to the end of 1941, would then be 19—20% for all items, about 16% for food[3], and nearly 50% for clothing.

(2) The decline in the volume of goods consumed has been accompanied by a steady rise in money incomes, a situation which would lead to serious inflation if special measures were not taken to prevent it. We have often argued in this BULLETIN that rationing is the only adequate method of preventing inflation and it is of interest, therefore, to calculate the proportion of total retail expenditure which is devoted to rationed commodities. An approximate estimate can be made as follows.

The total expenditure on food, drink and tobacco in 1940 has been given as £1,973 million[4]. The value of drink and tobacco in this total may be estimated at between £500 and £600 million[5], so that expenditure on food alone was between £1,370 and £1,470 million. From this we must subtract about 5% to allow for the consumption of food by the armed forces, leaving between £1,300 and £1,400 million as the expenditure of the civilian population. The Bank of England retail sales index for food shows a fall of 1% between 1940 and 1941, so that civilian food expenditure in 1941 may be estimated at between £1,285 and £1,385 million.

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[1] Cf. BULLETIN Vol. 4, No. 3, p. 63. The price indices given here relate to the average prices of groups of foods and in some cases the increases are due to a transference of expenditure from lower to higher qualities ; but in other cases there has been a decline in quality which is not reflected in the indices.

[2] This does not allow for the fact that the consumption of an adult man is greater than that of the average of all persons. On the other hand, some of the retail sales will have been consumed by members of the armed forces. The number of women in the forces is a very small proportion of the total population.

[3] The figures for consumption of food, being arrived at by dividing a value index by a price index, will include the effects of substituting cheaper for dearer kinds of commodities, so that the figure given above may exaggerate the decline in actual quantities consumed.

[4] *An Analysis of the Sources of War Finance and an Estimate of the National Income and Expenditure in* 1938 *and* 1940, Cmd. 6261.

[5] It was stated in reply to a question in the House of Commons (21 January 1942) that the value of tobacco sold in the year ending Sept. 1941 was £300 million, and of drink £415 million. There was an increase of 16% in tobacco consumption between 1940 and 1941, according to statistics published by the Tobacco Federation of the British Empire, and we also have to allow for the rise in prices of drink and tobacco n account of the higher duties imposed in 1940.

Expenditure on drink and tobacco was stated to be £715 million in the year ending September 1941, and we can assume approximately the same figure for the calendar year 1941[1].

For other goods, the Report of the Retail Trade Committee gives approximate figures for the total expenditure in 1939 and, applying the Bank of England Retail Sales Index, we can estimate the corresponding figures for 1941, which are shown below.

TABLE II.

VALUE OF RETAIL SALES OF NON-FOOD MERCHANDISE IN 1939 AND 1941.

	1939 (£ million)	1941 (£ million)
Total Non-Food (excl. drink and tobacco) ...	1,020	1,000
Clothing	465	450
Household Goods	265	235

For all items together[2] we arrive at an estimated total expenditure in 1941 of between £3,000 and £3,100 million (food £1,285—£1,385 mn., drink and tobacco £715 mn. and other goods £1,000 mn.)

The proportion of total food expenditure taken up by rationed foods is shown from the family budget enquiry carried out by this Institute to be about 50—60%[3]. Since the enquiry included only families with small incomes and, since the total food expenditure given above includes meals in restaurants, the proportion for the whole community would probably be less. We can make a rough estimate of this proportion by considering the total expenditure on rationed foods, assuming everyone consumes his full rations and taking the prices given in the Ministry of Labour Gazette[4]. The proportion obtained in this way is less than 50%, so that 50% seems a fair estimate of the proportion of rationed foods in total food expenditure. Among other goods, only clothing and soap are rationed and the latter is a very small item. Thus if we add expenditure on rationed foods to expenditure on clothing, we obtain the proportion of the total retail trade taken up by rationed goods, which comes to about 40%. If household goods were rationed (e.g. by expenditure), this would add another 8%; while drink and tobacco together take up about 23%. The field which could be covered by an extension of rationing is therefore still very wide, being more than half of total expenditure.

J. L. NICHOLSON.
G. D. N. WORSWICK.

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[1] This is probably an under-estimate since there was an increase in tobacco consumption in the last quarter of 1941.

[2] Fuel is excluded from the calculation, since the expenditure is not known.

[3] From the budgets collected in June 1941.

[4] For points rationing we assumed 2s. 6d. to 3s. a month per person.

THE RAYON INDUSTRY AND THE WAR.[1]

1. The Situation of the Industry before the War.

Rayon products or artificial textiles comprise material from vegetable matter (cellulose fibres), which may be called rayon proper, from animal matter (protein fibres) and from mineral matter, mainly coal tar, (nylon, vinyon, etc.) or wholly synthetic fibres. There are three main processes, by which rayon proper is produced : the Viscose Process (86% of all rayon in 1937), using mainly chemical wood pulp as raw material, the Acetate Process (10%), using mainly cotton linters, and the Cuprammonium Process, using cellulose from cotton linters, treated with copper solutions.

The name Rayon is used in three senses. It denotes continuous filament rayon (the oldest artificial textile) as distinct from staple fibre. It is used for cellulose textiles as distinct from the protein and mineral textiles. And it is also still the name for the whole group of artificial textiles. In this article it will be used as meaning : artificial cellulose textiles.

There are two types of rayon. The older type (continuous filament rayon or artificial silk) is produced by forming a chemical solution in which cellulose is dissolved and by forcing the spinning solution through minute holes to regenerate the cellulose, which then appears in the form of filaments. These are at some stage twisted to form endless threads (continuous filament yarn). There is no actual spinning process in the manufacture of artificial silk. The newer type of rayon (staple fibre) is produced by the filaments being cut into definite lengths and then spun on ordinary cotton or wool machinery. The product is a kind of artificial cotton, and mixed with cotton or wool, is the main product of the German war time textile industry.

Filament rayon and staple fibre take in the world as a whole the third and fourth place of the industrial fibres (after cotton and wool) and have left silk well behind. Their combined consumption in the world in 1938 was 10% of the consumption of all five principal textile fibres, as compared with 70% for cotton, 20% for wool and 0.6% for silk. The proportions in Great Britain were 60% for cotton, 34% for wool, 6% for rayon and 0.25% for silk as against 39% (cotton), 25% (wool), 36% (rayon) and 0.18% (silk) in Germany.

The British rayon industry before the war was the fifth in the world after Japan, Germany, the United States and Italy. Its relative importance in the world declined in spite of stable output, because of the phenomenal expansion of the staple fibre industry in Japan and Germany. In the Axis countries the production of staple fibre outweighed that of filament rayon, while in the democratic countries the reverse was the case. Staple fibre production in this country was, however, bigger than that of the United States, France or the Soviet Union. The preference of the Axis countries for staple fibre production is due partly to the cheapness of the process, and partly to the fact that it can be spun on cotton or wool machinery, and that it is a substitute for cotton, in which the Axis states are poor.

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[1] The author wishes to thank Messrs. Samuel Courtauld, Hanbury-Williams, Fred Williams and H. L. Bingham, all of Courtaulds, Ltd., for the expert advice and assistance, by which they generously helped him in his research work on the subject. The responsibility for the accuracy of facts and figures and for the opinions expressed by the author rests, however, solely with him.

At the outbreak of the war 11 firms produced rayon in Great Britain, one of them, Courtaulds Ltd., producing almost two-thirds of the total. There were four other firms, partly specialised, with a capital of more than one million pounds each : British Celanese Ltd., British Bemberg Ltd., British Enka Artificial Silk Co. and Lansil Ltd. The manufacture of pure filament rayon tissues was undertaken by the rayon manufacturers themselves and also by old silk weavers, knitters and hosiers in the Nottingham, Macclesfield and Leicester districts. Filament rayon as an admixture and staple fibre almost entirely went to spinners, weavers and hosiers of wool (Yorkshire) and cotton (Lancashire), the latter district taking rather more than the former. A certain amount of filament rayon tissues was also made in Lancashire.

II. THE RAW MATERIAL POSITION.

Almost 90% of the world's rayon is made from chemical wood pulp, mainly spruce and pine, growing in northern districts. The chief suppliers of this wood are the Soviet Union, Canada, Sweden, Finland and Norway (See Table I). While all these countries have their own considerable wood pulp industry, the biggest world producers of chemical wood pulp (for rayon and better-class paper), as distinct from mechanical wood pulp (for newsprint and cheaper paper) are (besides Sweden) Germany and the U.S.A. These two countries imported in addition to their own supply considerable quantities of wood. Germany exploits in increasing measure her own stocks of beech and fir and is developing a straw pulp industry, using mainly wheat and rye straw.[1] The Canadian wood pulp industry has expanded considerably during the war. About 1.1 or 1.2 lbs. of pulp are used for 1 lb. of rayon yarn.

TABLE I.

WORLD PRODUCTION OF CHEMICAL WOOD PULP in 1938[2]

Country	*Production.*	*As Proportion of World Production*	*Export to Gt. Britain*	*As Proportion of Production*	*As Proportion of British Imports.*
	mill. lbs.	%	*mill. lbs.*	%	%
United States	9,200[5]	28	46	0.5	2.1
Sweden	5,300	16	730	14	34
Germany[3]	3,700	11	21	0.6	1.0
Finland	3,300	9.8	1,000	32	48
Canada	2,200	6.9	64	2.8	3.0
Rest of World[4]	9,300	28	240	2.7	12
	33,000[6]	100.0	2,100	6.5	100.0

More than 10% of the world's rayon (discounting straw pulp rayon) is made from cotton waste or linters, a by-product of the American cotton seed oil mills. This material makes generally a stronger and more elastic fibre than wood pulp cellulose. But it is also much dearer. Linters, bleached and treated, cost about 5d. a lb. in 1939, prepared wood pulp only 2d. a lb.

[1] Other recent, partly still experimental, developments in rayon raw materials include march canes (Italy), bean stalks (Manchukuo) and linseed straw (India). Research is being conducted in this country into the use of seaweed as a basic material, while wheat and barley straw have repeatedly been proposed in Great Britain.

[2] Includes smaller quantities of chemical pulp of straw and other vegetable fibres and rags.

[3] Incl. Austria.

[4] Mainly : Norway, U.S.S.R., Sakhalin, Czecho-Slovakia, Great Britain (370 mill. lbs), France, Japan and Poland in this order.

[5] 11,000 in 1939.

[6] Estimate.

Of the total chemical wood pulp imported into this country in 1938 (2,100 mill. lbs.) only 180 mill. lbs. were rayon pulp; of the total chemical wood pulp, produced in the U.K. (370 mill. lbs.), again only a very small part was used for rayon. The only other important raw material for Viscose Rayon is sulphur, while Acetate Rayon requires raw linters (or wood pulp), molasses and sulphur. One ton of viscose yarn requires imported raw materials, taking 75 cubic feet (acetate yarn: 160 cub. ft.) against 74 cub. ft. for American raw cotton and 130 cub. ft. for wool yarn. The imported materials cost £28 in August 1939 (£34 for Acetate yarn) as compared with £63 for American raw cotton and £160 for wool yarn.[1] Viscose yarn, therefore, requires less shipping space than wool and both types of rayon yarn less foreign exchange than either wool or cotton. The relative export value of rayon goods is much higher than that of cotton goods, as only 15% of the value of rayon goes into imported materials as against 50% in the case of cotton goods. (prices of 1938). Rayon is, moreover, the nearest substitute for silk, which is now practically unobtainable. Further, since the loss of our two main peace-time suppliers, Finland and Sweden, the greater part of our requirements of wood pulp comes from Eastern Canada, i.e. from within the Empire, and in terms of shipping from much nearer than either cotton (U.S.A., India, Brazil and Egypt) or wool (Australia, U.S.A., Argentine, S. Africa and New Zealand). There seems, therefore, to be a case for increasing the proportion of rayon in the general textile quota, the more so as rayon, in the form of staple fibre, could employ cotton or wool manufacturers, deprived of their original raw material. A further advantage is the fact that the rayon industry, similar to wool, and much more so, could develop its own raw material basis in this country now or after the war, or could rely alternatively on European or American supplies.

There are, however, three strong arguments against a disproportionate development of rayon in relation to cotton or wool for the duration of the war: rayon has in many respects not yet reached the fundamental qualities of cotton (and still less of wool); interests of the raw material producers abroad must be considered, (moreover, the Government have contracted to buy the total wool clips of Australia and New Zealand and South Africa for the duration of the war); the scarcity of construction material and labour may militate against an extension of rayon plants.

The natural policy for the duration of the war under these circumstances seems to be the full use of available rayon plant, based on full capacity production of the British pulp factories, to which Canadian raw material will have to be added. It may also be advisable to convert a part of the filament rayon factories to the production of staple fibre, which can be done with almost negligible installation costs. The reason for this proposal is that staple fibre up to a point is a more utilitarian article than continuous filament rayon (a substitute for silk), because it can be blended with other fibres more easily than filament rayon and as an admixture to and a substitute for cotton it can be used for the production of necessities. A certain amount of filament rayon can be usefully maintained for the production of stockings, women's underwear, coat lining, etc. In the production of parachutes filament rayon is the only substitute for silk, which itself is used now only for the production of parachutes for men. It may cost a few per cent. more to produce staple fibre in filament rayon factories but even this is not undisputed.

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[1] Quotations from "The Times" (Special Correspondent), 24th April, 1941).

III. The Export Trade.

Great Britain exported about 12% of her yarn output in 1936—38 in the form of yarn and another 6—7% in the form of tissues. More than 80% of the total annual production of about 140—150 mill. lbs. were consumed (or stocked) at home in addition to a few mill. lbs. of imports, these mainly in the form of tissues.

The U.K. was responsible for 11% of world exports of yarn (against 7% of world yarn output) and 5.7% of tissues in 1938. Imports of yarn were negligible, while those of tissues were about 21—24 mill. lbs. annually, corresponding to about 30% of our own exports of tissues. Our main supplier was France.

The biggest supplier of both filament rayon and staple fibre before the war was Italy, with Japan, Great Britain and Holland as strong competitors. The biggest exporter of rayon tissues was Japan. The major part of the world export of staple fibre went to the U.S.A. and Germany, while the importers of filament rayon or rayon tissues were fairly evenly spread over the world with India leading in the imports of filament rayon yarn and Australia of rayon tissues. The British export trade had a structure similar to the world trade. Staple fibre went mostly to U.S.A. and Germany, while filament rayon and rayon tissues went practically everywhere. Australia was the biggest customer for both articles, followed closely by Sweden and Czecho-Slovakia for filament rayon and by S. Africa and Eire for rayon tissues. India, the world's biggest importer of filament rayon (annual import: 16 mill. lbs) took only 100,000 lbs. a year from Great Britain, the rest coming mainly from Japan at very low prices.

Table II.

World Trade 1938 *in Rayon Yarn and Tissues in mill. lbs.* [1]

Exporters

	Filament Rayon Yarn		*Staple Fibre Yarn*		*Rayon Tissues*
Italy	56	Italy	30	Japan	62
Japan	22	U.K.	14	France	9.2
Netherlands	14	Germany	3.5	Italy	7.2
U.K.	8.0			U.K.	6.8
Others	40	Others	8.5	Others	35
	140		56		120

Importers

	Filament Rayon Yarn		*Staple Fibre Yarn*		*Rayon Tissues*
India	16	U.S.A.	23	Australia	13
Germany	12	Germany	13	Kwantung	10
Mexico	9.6	Czechoslovakia	3.4	Manchukuo	9.4
U.K.	0.6			U.K.	5.2
Others	100	Others	17	Others	82
	140		56		120

[1] Tissues calculated on the basis of 5 sq. yds. corresponding to 1 lb. of yarn.

The conditions on the world market have changed considerably in the last three years. Exports from and imports to the European Continent declined strongly in 1940 and ceased almost entirely in 1941. The Continent is now practically a closed economic area with regard to rayon, with Germany, France, Italy and Holland as the main producers. The United States in the meantime have continuously increased their own production of staple fibre (1938 : 30—1939 : 51—1940 : 81—1941: 120 mill. lbs.) and decreased their imports (1938—1941 : 23—47—18—12), of which 12, 18, 7 and about 7 mill. lbs. came from this country between 1938 and 1941. In the rest of the world Japan and Britain had no further serious competitors in 1940 and 1941. Although Japan competed with very low prices and Latin America developed its own production of tissues (not of yarn), and in spite of the loss of the European market, which had been a considerable one for yarn (not for tissues), British exports of rayon yarn as well as of tissues have increased considerably since 1938. They can be estimated for 1941 at 20 mill. lbs. filament rayon (as against 7.6 mill. lbs. in 1938), and at 16 mill. lbs. rayon tissues including mixtures (9.2 in 1938). In spite of increased exports of staple fibre to Canada the loss of the total German and the greater part of the American market have prevented a similar increase in staple fibre exports.

With the entry of Japan into the war the export opportunities to the Empire and Latin America have risen still further, limited only by shipping considerations and labour problems in this country.

IV. THE HOME MARKET.

The main problems the Industry has had to face since the war have been the increasing scarcity of labour and raw materials ; the division of the product between the export, government and civilian market ; the maintenance of reasonable profits with decreased turnover, rising costs and regulated prices, and finally the most economical use of available plant, raw materials and labour.

(1) Throughout the first two years of the war the industry was in an excellent position as to raw materials and labour. Considerable stocks of raw material were available at the outbreak of war. A great part of the industry is situated outside the centres of the munitions industry. The government favoured increased exports of the industry by allocating materials and labour. It treated the industry generously in comparison with other textile industries, probably because of its export value and import advantages.

(2) In spite of higher quotas on the home market than either cotton, wool, linen or silk, the industry, because of comparatively small government demand for its products, would have declined very considerably, if exports had not been allowed to rise from 31 mill. lbs. (tissues converted) in 1938 to about 50 mill. lbs. in 1941, i.e. by 61%. Therefore, in spite of the home market quota (Government and service demands not included) reduced to 40% of 1939 since April 1941,[1] the industry was able to maintain a steady level of production. A recent trade estimate of 62% production in 1941 as compared with 1938 seems to be a gross underestimate and the actual figure to be much nearer 90% than

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[1] As against Cotton to 20%, Wool to 30%, Linen to 20%, Silk (substituted by Rayon) to 30% and Hosiery (value) to 60%.

60%. The direction of the British rayon trade has, however, changed considerably in the last few years. While only 18—19% of production went abroad in 1938, it was probably 36—38% in 1941. On the other hand rising service demands, coupled with successive decreases of the civilian quota have brought the latter down to a little more than 40% of the total production in 1941 as compared with more than 80% in 1938. From September 1941 exports were officially reduced to 30% of total production when it became clear that coupon demands could not be met, if exports were to be maintained at the old level and raw material imports as well as labour supply not considerably increased.

(3) Originally the only control the Government exercised over the industry through the Silk and Rayon Controller (appointed on the 1st September 1939 and subordinated to the Cotton Control Board) was control of prices. The original price schedule was cancelled in January 1940 and prices were linked up with costs on the basis of the Prices of Goods Act, 1939. The development of costs can be seen on Table III. The great increase in "other costs" from 1940 to 1941 is due to the introduction of the War Damage Contribution (1d. per lb.), the increase in the price of coal (0.7d. per lb.) etc. On the other hand a great part of the increase (probably 2—3d. per lb.) is due to the spreading of overhead expenses over a decreased turnover by maintaining absolute peacetime profits.

TABLE III.

AVERAGE COSTS (*pence per pound of viscose filament rayon*).

	June 1938	*1939*	*1940*	*1941*
Raw Material	5.3	5.3	6.2	7.9
Labour	5.0	4.7	4.7	5.8
Depreciation[1]	1.7	1.9	1.7	2.0
Other costs[2]	3.7	3.7	3.6	9.1
	15.7	15.6	16.2	24.8

(4) Concentration among the yarn manufacturers was suggested, but not carried out, after Courtaulds closed voluntarily one viscose yarn factory entirely and a part of another one, both in centres of war industry, while maintaining full capacity production in the four factories in Lancashire and North Wales (close to the yarn markets). The other ten firms were released from their obligations under the concentration order and declared "protected" (nucleus firms). Conditions in the weaving industry were more complicated because of the larger number of firms and the overlapping with other industries ; but the whole scheme was completed, without the need for official regulation. All the trade marks have been preserved by voluntary arrangements. As in other textile industries special quotas for "Utility Clothing" were introduced last autumn and the quotas for general goods cut to such an extent, that the level of total production for civilian use has apparently not been affected.

V. CONCLUSION.

The rayon industry has maintained during the war a steady prosperity and peace time profits from a slightly reduced turnover. The small firms especially have done fairly well during the war—some have come on the dividend list once more after an interval of several years. In 1938 the rayon quota in the textile production of this country (linen excepted) was 6% but it was probably about 10% last year. The increase of the export quota in the total production is also notable, because fabrics are not generally interchangeable between home and foreign markets, which influences, of course, the types of yarn produced.

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[1] On a 15 years basis.

[2] Repair Materials, Administration, Rates, Taxes, Insurance, Coal, Electricity, Labour Welfare, etc.

In addition the export trade itself has changed its structure. Before the war it was an outlet for surplus yarns (South America and Australia) and inferior yarns (India, before the Japanese came in, and Syria, the Dutch East Indies etc.). It was, therefore, less profitable than the home market. But with the disappearance first of Italian and then of Japanese competition and with the development of a great rayon piece goods industry in Latin America (in urgent need of yarn) the export trade has become much more profitable than the price regulated home market. Were it not for the introduction of the 30% export quota last September, this year would have probably seen the disappearance of rayon from the civilian market at home. The staple fibre export has shifted from the United States to Canada and the filament rayon yarn export from Europe to Latin America. Only in tissues has the Empire remained the main outlet.[1] The future will probably lie with mixtures between natural and artificial fibres, as all the artificial fibres are equally adaptable for the purpose of these mixtures. The relation between filament rayon and staple fibre has shifted continuously in favour of the latter and it was in 1940 or 1941 for the first time that world production of staple fibre was bigger than that of filament rayon.

D. B. HALPERN.

DIARY

TREASURY CONTROL

In March the "Banker" published an article on the Finance of Supply, which is said to represent the first authoritative exposition of the Ministry of Supply's actual practice. The section on the "Function of Treasury Control" may be summarized as follows :

One of the most important tasks in the direction of war economy is the allocation of productive resources to different purposes in such a way as to achieve a reasonably balanced supply. While much of this work of allocation is performed by inter-departmental machinery of an entirely non-financial kind "the Treasury's financial control contributes significantly to the solution of the problem. This system indeed should be regarded less as a means of controlling monetary expenditure than as a method of allocation."

Now, under the new arrangement as announced by Mr. Lyttleton in Parliament on March 25th, the allocation of raw materials, machine tools and, with a certain qualification, that of labour will be under the control of the Minister of Production, who will be assisted in this work by the Joint War Production Staff. Yet, neither in the Ministerial speech nor in the debate can we find any mention that the system of Treasury Control, as hitherto exercised, would be modified.

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[1] Why under the prevailing conditions an export levy of 3d. per lb. of yarn is still collected by the manufacturers, in order to pay administration and propaganda expenses of the Central Rayon Office Ltd. (for increasng export trade on efficient and non-competitive lines) to the tune of £ mill. 1—2 annually is difficult to understand.

As can be seen from the article quoted above, the Finance Branches of the spending Departments already bear the whole responsibility of deciding that the detailed method of procurement which is proposed is likely to be economic. Is it intended that the Treasury should retain "the broad policy function of determining what type of expenditure shall take place ?" Will it be possible that a programme vetted by the Joint War Production Planning Group and by the Programme and Planning Division, and finally approved by the Joint War Production Staff, will be pruned down by the Treasury, the pruning resulting from "a belief, not that the full scheme would have involved too large a monetary expenditure, but that the resultant supply would have been excessive in relation to the supply of other things."

A clarification of this point would certainly be welcomed because it should not happen again that ' men and machines may be kept idle for weeks or even months while contracts await the approval of the Treasury'[1] and 'vital war production is being held up by the Treasury quibbling on pounds, shillings and pence and that useful contributions to the war effort are discouraged by the same counting-house type of mind.'[2]

DISTRIBUTION OF INCOMES.

The new White Paper on War Finance (Cmd. 6347), which will be discussed in detail in later numbers of the BULLETIN, contains some figures on the distribution of incomes, showing the aggregate income, *gross* and *net*, in different income groups. The figures of gross income fit quite well to the Pareto equation and in this way we can obtain estimates of the number of incomes in each group. The equation is

$$\log y = 10.62 - 1.691 \log x$$

where y is the number of persons with incomes at or above £x per annum. The following table shows the numbers in the different income groups, estimated from this equation.

DISTRIBUTION OF PERSONAL INCOMES IN FINANCIAL YEAR 1940—41.

Range of Gross Income	*Aggregate Income Before Tax*	*After Tax**	*Number of Persons estimated from equation*
£ £	£	£	(000's)
250— 500	1,038	883	2,543
500— 1,000	477	358	786
1,000— 2,000	320	203	243
2,000—10,000	367	174	102
10,000 and over	176	39	7
Total, above groups	2,378	1,657	3,681

* Income Tax and Surtax at 1941—42 rates.

With the help of these figures we can also estimate the additional yield in income tax, supposing *gross* income were limited to £2,000 or £10,000 per annum, which correspond to *net* incomes of about £1,150 and £3,150 respectively. At the present rates of income tax, the total *net* incomes above these limits, are £213 millions and £39 millions respectively. Thus the additional yield if gross income were limited to £2,000 would be £88 million ; and, if gross income were limited to £10,000, it would be £17 million. These estimates may be compared with the Chancellor's statement that if *net* income were limited to £2,000 (corresponding to a gross income of somewhat under £5,000) the additional yield would be about £30 million.

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[1] Leader in the "Times," March 23rd, 1942. [2] "Financial News," October 18th, 1941.

SHIPPING SPACE AND FOOD POLICY.

The *Financial News* has recently drawn attention to the need for a comprehensive policy of food imports and production with a view to economy in shipping space. There is probably scope for improvements by a planned policy, though the difficulties of carrying it through are considerable. The aim must be, broadly speaking:

1. To use imports so as to get the maximum effect in terms of nutritional value,
2. To substitute wherever possible, imports which require more shipping space for others which require less and are equivalent in term of nutritional value, and,
3. To draw from the nearest sources of supply so as to minimise the amount of shipping used.

An example of the first type of economy is the introduction of wholemeal bread which has already been carried through; or the use of imported feeding stuffs for the production of dairy goods rather than meat. The second type of economy is exemplified by the substitution of animal protein (meat, or better still, cheese) for cereals in imports; if, as was advocated in an article in this BULLETIN, the *convoy space* taken up by wheat ships can be partly switched over to ships carrying cheese or meat, there might be a saving in shipping space with the same amount of protein imported.[1] The difficulties in carrying out a policy are closely connected with the third point, the question of supply routes. If supplies of meat and cheese from the United States are limited, it is difficult to secure the economy mentioned, because wheat shipped from U.S. is still cheaper in terms of shipping than cheese or meat from New Zealand. Further, the available refrigerator space sets a limit to the imports of meat and dairy products. The last argument does not apply to the imports of canned meat. Refrigerator space could be economised by substituting imports from North America for imports from Australasia which to some extent has been done. The question of surplus products in Australasia is a secondary consideration in this connection. The crux of the problem is therefore the difficult of increasing agricultural production in North America. As far as this can be done, refrigerator space will be set free, on account of shorter supply routes, and this again can be used to increase meat imports relatively to imports of wheat. The increase in American production would be least difficult in the case of pork; a change in meat consumption in favour of pork would therefore seem to make the solution of the problem easier.

In so far as Australian and New Zealand production is indispensable for the supply of this country it may be possible partly to ship it 'indirectly,' by loading supply ships which carry armament to Australia on their return journey to U.S. with tinned meat; the meat could then be used in U.S. and an equal amount exported from U.S. to Great Britain. This possibility again is limited by the amount of shipping which carries munition from U.S. to Australia.

From the complexity of considerations involved emerges one safe conclusion, namely that a comprehensive policy in this field requires a very high degree of co-ordination between the agricultural and food policies of the United States and Great Britain.

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[1] R. S. G. Rutherford, Bulletin, Vol. 3, No. 12, p. 267/268.